

From: [Young, Howard S.](#)
To: [Zhen, Davis](#); [Sheldrake, Sean](#)
Cc: [Scott Coffey](#); [Greazel, Andrew](#)
Subject: RE: Response to EPA questions about horizontal and vertical controls
Date: Monday, April 16, 2018 12:49:34 PM
Attachments: [Change Request 02 - Survey Control Points.pdf](#)

Sean and Davis,

We reviewed the supplemental email and Change Request 2 and have the following comments. Change Request 02 and the cover email responses inadequately describes the changed GPS procedures. The change request and email appear to be responding to Andy Greazel's preliminary email but additional questions came up subsequent to this email. The email response and our oversight observations indicate that there are inconsistencies on how the GPS quality checks are done. It would benefit the project if a revised SOP for the horizontal and vertical control is provided so that all field crew and oversight staff know what is required. Items inadequately addressed are:

- No frequency of vessel GPS position check provided. The original FSP has morning and evening position checks of each vessel GPS. Field crews have informed EPA oversight staff that only morning checks are now performed because the evening checks were not determined to be necessary. The frequency of checks going forward must be provided.
- No map or photograph of benchmark PH2 is provided. This should be provided and supporting survey information should be provided in a similar presentation to the information presented for benchmark PH1 in the original FSP.
- No information on how the vessel GPS reference point will be offset onto the benchmark PH2. The procedure for positioning the vessel reference point over PH2 or applying offsets must be described.
- AECOM's was not responsive to EPA's request to be provided with the electronically recorded GPS position check data. The process for comparing GPS position check coordinates to PH2 reference coordinates, computing accuracy, and how this information can be shared with EPA in real time must be provided. EPA's goal is to verify on a daily basis that the sediment sample locations are being recorded to the accuracy requirements presented in the FSP.

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From: Tyrrell, Ken <ken.tyrrell@aecom.com>
Sent: Monday, April 16, 2018 10:06 AM
To: Zhen, Davis <Zhen.Davis@epa.gov>
Cc: Coffey, Scott <CoffeySE@cdmsmith.com>; Young, Howard S. <younghs@cdmsmith.com>; Greazel, Andrew <GreazelAD@cdmsmith.com>
Subject: FW: Response to EPA questions about horizontal and vertical controls

Davis and team:

With apologies, here's a response to questions raised by Andy Greazel regarding horizontal and vertical controls.

My previous email only included the attachment whereas it's been brought to my attention the full email string is pertinent to the response.

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From: Pretare, Jennifer

Sent: Monday, April 16, 2018 9:07 AM

To: Tyrrell, Ken <ken.tyrrell@aecom.com>

Cc: Surowiec, Mike <mike.surowiec@aecom.com>

Subject: Response to EPA questions about horizontal and vertical controls

Ken,

Please see the attached responses, and Change Request 2 (attached). This can be forwarded to Davis Zhen and Andy Greazel.

Thanks

Jenny

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PRIVILEGED AND CONFIDENTIAL/JOINT DEFENSE COMMUNICATION/ATTORNEY WORK PRODUCT

Hi Nicky and Jennifer,

I am filling in for Howard Young while he is in the field at a remote mine site until Thursday (4/12). We would like to clarify a few items about the horizontal controls used for position checks for the research vessels and the handheld GPS. The field crews were very helpful, but did not have all the background information. The FSP indicates the research vessels and handheld GPS are required to record the coordinates at PH1 using an offset (if needed) in the morning and the evening in the applicable logbook. It is our understanding that the vessels are taking coordinates at a piling at the Fed Devine dock, which is over ½ mile from the PH1 location, but it is not clear if this somehow falls under the offset statement you included in the FSP.

At the beginning of Surface Sediment field work on March 29 we determined that PH1 was beyond easy reach of vessel based GPS receivers (it is in a parking lot > 100 feet from the dock). We made a field adjustment, in coordination between AECOM, DEA and Gravity to establish a new point at the Fred Devine dock. EPA observers were not present that day to review the change. We have attached Change Request 2 to this email to establish this point as PH2.

- Can you clarify how coordinates for this location were established for comparison/check?

This location (we are calling PH2), was established during the DEA Bathymetry Survey with better

than decimeter accuracy.

- Gravity indicated that these position checks were recorded digitally, but not in a physical log.
Can you clarify if this is the plan going forward?

Yes, this is the how the data will be captured for the remainder of the Surface Sediment field work. This data is exported on a daily basis to AECOM and is archived on a project server. Subsequent Portland Harbor field studies may rely on different GPS systems, as described more below.

- Is it possible to get a quick summary of the position checks?

We will need to get approval from the client before releasing any data.

Additionally, we understand from field staff that the handheld position check is performed at the lab/warehouse at the intersection of two cracks.

- This appears to be a deviation from the FSP, and a description of the deviation needs to be provided to EPA for approval.
- Can you provide additional details on the establishment of this check point?

The position check described above should be performed at PH1 or PH2 (if Change Request 2 is approved); this will be clarified to the field crews. This check is performed with a different GPS system comprised of a Trimble R1 and mobile phone based collector application. It is a redundant QA/QC measure and is referenced so in Appendix B-1 of FSP (Survey Control). This data is not being retained in the project database specifically unless there is a failure of the vessel navigation system. It will be retained in electronic file format and stored on project servers. Accordingly, a Change Request does not seem necessary at this time however if EPA prefers this we can prepare one.

Please let us know if you have any questions or additional considerations.

Additional consideration: The Fish Tracking Study (beginning in late April) will be using two small open cabin angling vessels which are not equipped with the same GPS systems and software available on the larger, enclosed research vessels. We anticipate using the more portable Trimble R1 system on these angling vessels to record fish capture locations. We will submit a separate Change Request to EPA for use of the R1s on the Fish Tracking Study.

Thank you,

Andy Greazel R.G.

Geologist

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